CLAIMS

1. Method of preparing an organic luminescent material comprising the steps of depositing a thin film of organic luminescent substance on a solid inert support, then heat-treating (annealing) the deposited substance at a predetermined temperature and in a humidified or anhydrous atmosphere and, finally, returning to room temperature keeping the substance in the same atmosphere.

2. Method according to claim 1, wherein the humidified atmosphere is an atmosphere of oxygen, nitrogen, air, inert gas or mixture thereof, containing more than 50% moisture, or of anhydrous oxygen, nitrogen, or inert gas or mixtures thereof.

3. Method according to claim 2, wherein the annealing is performed at a predetermined temperature ranging from 120°C to 180°C for a period of time of 5 to 30 minutes, followed by returning to room temperature in a time not longer than 5 minutes.

4. Method according to claim 3, wherein the predetermined temperature of annealing is the temperature producing the maximum increase of the emission intensity of the film.

5. Method according to any one of claims 1 to 4, wherein the organic luminescent substance is a photoluminescent or electroluminescent substance selected from the group comprising tris-(-8-hydroxyquinoline) aluminum (Alq3), phenoxy-bis-(8- hydroxyquinoline) aluminum (Alq2-OPh), 5,10,15,20-tetraphenyl-21H, 23H-porphine/Alq3 (TPP)/Alq3 complex, functionally equivalent substances or mixtures thereof.

6. Method according to claim 5, wherein the organic luminescent substance optionally comprises one or more substances selected from the group tetracene, anthracene, carbazole, rubrene, TBD, PKV, DMC, α-6T or Er(TTA)3(phen) and/or one or more phenolic compounds capable of stabilizing luminescence selected from the group

comprising phenol, vanillin, L-tyrosine, butylated hydroxyanisole (BHA), butylated hydroxytoluene (BHT), vitamin E, propyl gallate, 2,4,6-tri-t-butylphenol, hydroxytyrosole, caffeic acid.

7. Method according to any one of claims 1 to 6, wherein the film of organic luminescent substance is generated by evaporating/sublimating under vacuum the luminescent substance and depositing the vapors on an inert flat support of glass, crystal, plastics material or any other substance compatible with adsorption, emission and detection of light.

8. Method according to claim 1, wherein the organic luminescent substance comprises Alq3, the annealing is performed at about 150°C for about 10 minutes, the humidified atmosphere is water-saturated air and after annealing the film is returned to room temperature in the same atmosphere in a time not longer than 5 minutes.

9. Method of stabilizing the luminescence of an organic photoluminescent or electroluminescent substance comprising annealing the substance at a predetermined temperature in a humidified or anhydrous atmosphere and then returning to room temperature keeping the substance in the same atmosphere.

10. Method according to claim 9, wherein the humidified atmosphere is an atmosphere of oxygen, nitrogen, air, inert gas or mixture thereof containing more than 50% moisture, or the anhydrous atmosphere is an atmosphere of oxygen, nitrogen, inert gas or mixture thereof.

11. Method according to claim 10, wherein the annealing is performed at a predetermined temperature ranging from 120° to 180°C for a period of time of 5 to 30 minutes, followed by returning to room temperature in a time not longer than 5 minutes.

12. Method according to claim 11, wherein the predetermined temperature of annealing is the temperature producing the maximum increase of the emission intensity

of the film.

13. Method according to any one of the claims 9 to 12, wherein the organic luminescent substance is a photoluminescent or electroluminescent substance selected from the group comprising tris-(-8-hydroxyquinoline) aluminum (Alq3), phenoxy-bis-(-8-hydroxyquinoline) aluminum (Alq2-OPh), 5,10,15,20-tetraphenyl-21H, 23H-porphine/Alq3 (TPP)/Alq3 complex, functionally equivalent substances or mixtures thereof.

14. Method according to claim 13, wherein the organic luminescent substance optionally comprises one or more substances selected from the group tetracene, anthracene, carbazole, rubrene, TBD, PKV, DMC, α-6T or Er(TTA)3(phen)and/or one or more phenolic compounds capable of stabilizing luminescence selected from the group comprising phenol, vanillin, L-tyrosine, BHA, butylated hydroxytoluene (BHT), vitamin E, propyl gallate, 2,4,6-tri-t-butylphenol, hydroxytyrosol, caffeic acid.

15. Method according to any one of the claims 9 to 14, wherein the organic luminescent substance subjected to annealing is in form of film deposited on an inert flat support of glass, crystal, plastics material or any other substance compatible with adsorption, emission and detection of light.

16. Method according to claim 9, wherein the organic luminescent substance comprises Alq3, the annealing is performed at about 150°C for about 10 minutes, the humidified atmosphere is water-saturated air and after annealing the film is returned to room temperature in the same atmosphere in a time not longer than 5 minutes.

17. Organic luminescent material having a stabilized luminescence, obtainable by the method of preparing according to any one of the claims 1 to 8 or the method of stabilizing according to any one of the claims 9 to 16.

18. Organic material according to claim 17, being in a crystalline phase different from that of the original

luminescent substance.

19. Film of organic luminescent material according to claim 17 or 18, deposited on an inert support.

20. Luminescent device comprising the film according to claim 19.

21. Sealed atmospheric agent proof system comprising the device according to claim 20 in an inert atmosphere.

22. Use of devices or systems according to claim 20 or 21 for the preparation of electrooptic articles.